

We claim:

1. A compound of the following formula I, or a pharmaceutically acceptable salt thereof:



wherein:

- Z is a monocyclic or bicyclic ring system optionally containing up to 4
 10 heteroatoms selected from N, O, and S, and wherein a CH₂ adjacent to any of the said N, O or S heteroatoms is optionally substituted with oxo (=O), and wherein Z is optionally substituted with 0-5 substituents chosen from R¹, R², R³ or R⁴;

- R¹ and R² are each independently selected from the group consisting of H, F,
 15 Cl, Br, I, NO₂, CF₃, CN, OCF₃, OH, C₁-C₄alkoxy-, C₁-C₄alkylcarbonyl-, C₁-C₆ alkyl, hydroxy C₁-C₄ alkyl-, C₃-C₆ alkenyl, C₃-C₆ alkynyl, C₃-C₁₀ cycloalkyl(C₀-C₄alkyl)-, H₂N(C₀-C₄)alkyl-, R⁶HN(C₀-C₄)alkyl-, R⁶R⁷N(C₀-C₄)alkyl-, R⁷S(C₀-C₄)alkyl-, R⁷S(O)(C₀-C₄)alkyl-, R⁷SO₂(C₀-C₄)alkyl-, R⁶NSO₂(C₀-C₄)alkyl-, HSO₃, HO₂C(C₀-C₄)alkyl-, R⁶O₂C(C₀-C₄)alkyl-, and R⁶R⁷NCO(C₀-C₄)alkyl-, or
 20 alternatively, R¹ and R², when on adjacent carbon atoms, may be taken together to be methylenedioxy or ethylenedioxy;

- R³ is a 5- or 6-membered heterocyclic ring system containing up to 4
 heteroatoms selected from N, O, and S, said heterocyclic ring system being optionally
 25 substituted with 0-3 R⁵, wherein when R⁵ is hydroxy the heterocycle may undergo tautomerization to an oxo species or may exist as an equilibrium mixture of both tautomers;

- R⁴ is selected from F, Cl, Br, I, NO₂, CF₃, CN, C₁-C₄alkoxy-, OH, oxo, CF₃O,
 30 haloalkoxy, C₀-C₄ alkylhydroxy, C₁-C₄ alkyl-, C₁-C₄ alkylcarbonyl-, C₀-C₄ alkylOCOR⁶, C₀-C₄ alkylOC(=O)OR⁶, C₀-C₄ alkylOC(=O)NR⁶R⁷, NH₂, NHR⁶, C₀-C₄

alkylNR⁶R⁷, C₀-C₄ alkylNR⁷C(=O)OR⁶, C₀-C₄ alkylNR⁶SO₂NR⁶R⁷, C₀-C₄ alkylNR⁷SO₂R⁶, C₀-C₄ alkylSR⁶, C₀-C₄ alkylS(O)R⁶, C₀-C₄ alkylSO₂R⁶, SO₃R⁷, C₀-C₄ alkylSO₂NR⁶R⁷, C₀-C₄alkyl SO₂NR⁷ CO(CR⁹R¹⁰)₀₋₃R⁶, C₀-C₄ alkylCO₂H, C₀-C₄ alkylCO₂R⁶, C₀-C₄ alkylCONR⁶R⁷, and C₀-C₄alkylCONR⁷SO₂(CR⁹R¹⁰)₀₋₃R⁶;

5

R⁵ is selected from the group consisting of H, C₁-C₄ alkyl, C₃-C₇ cycloalkyl, F, Cl, Br, I, NO₂, CN, CF₃, OCF₃, OH, oxo, C₁-C₄alkoxy-, hydroxyC₁-C₄ alkyl-, C₁-C₄ alkylcarbonyl-, CO₂H, CO₂R⁶, CONR⁶R⁷, NHR⁶, and NR⁶R⁷;

10 R⁶ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₆ alkynyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic (C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy,

15 hydroxy C₀-C₄ alkyl, oxo, F, Cl, Br, CF₃, NO₂, CN, OCF₃, NH₂, NHR⁷, NR⁷R⁸, SR⁷, S(O)R⁷, SO₂R⁷, SO₂NR⁷R⁸, CO₂H, CO₂R⁷, and CONR⁷R⁸;

R⁷ and R⁸ are each independently selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₆ alkynyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxycarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₁-C₅ alkoxy)carbonyl, arylsulfonyl, aryl(C₀-C₄ alkyl)-, heterocyclic(C₁-C₅ alkoxy)carbonyl, heterocyclic sulfonyl and heterocyclic (C₀-C₄ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

20

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alternatively, R⁶ and R⁷, or R⁶ and R⁸, or R⁷ and R⁸, when both substituents are on the same nitrogen atom, can be taken together with the nitrogen atom to which they are attached to form a heterocycle selected from the group consisting of

30 1-aziridinyl, 1-azetidiny, 1-piperidinyl, 1-morpholinyl, 1-pyrrolidinyl, thiamorpholinyl, thiazolidinyl, and 1-piperazinyl, said heterocycle being optionally substituted with 0-3 groups selected from the group consisting of oxo, C₁-C₆ alkyl,

C₃-C₇ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxy carbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₅ alkyl), heterocyclic(C₀-C₅ alkyl), aryl(C₁-C₅ alkoxy)carbonyl, heterocyclic(C₁-C₅ alkoxy)carbonyl, C₁-C₆ alkylsulfonyl, arylsulfonyl, and
 5 heterocyclicsulfonyl,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

10 J is selected from the group consisting of -NR⁷- and -C(=O)-;

K is selected from the group consisting of -NR⁷-, -C(=O)-, and -CHR⁹-;

L is selected from the group consisting of a single bond, -C(=O), -CR¹⁰ R¹¹-, -
 15 C(=O)CR¹⁰ R¹¹-, -CR¹⁰ R¹¹C(=O)-, -CR¹⁰R¹¹C(=O)-, -HR¹⁵C-CHR¹⁶-, and -
 R¹⁵C=CR¹⁶;

R⁹ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,
 20 wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, and NO₂;

R¹⁰ is selected from the group consisting of H, F, Cl, Br, C₁-C₆ alkoxy, C₁-C₈
 25 alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

30 R¹¹ is selected from the group consisting of H, F, Cl, Br, OMe, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-, wherein said aryl or heterocyclic groups are substituted

with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

alternatively, R¹⁰ and R¹¹, when on the same carbon atom, can be taken
 5 together with the carbon atoms to which they are attached to form a 3-7 membered carbocyclic or 3-7 membered heterocyclic non-aromatic ring system, said carbocyclic or heterocyclic ring being optionally substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, hydroxy C₀-C₄ alkyl, oxo, F, Cl, Br, CF₃, and NO₂;

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X is selected from the group consisting of OR¹², NR¹²R¹³, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, C₆-C₁₀ aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents
 15 independently selected from R¹⁴, with the proviso that when L is a single bond, X cannot be NR¹²R¹³;

R¹² is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, monocyclic or bicyclic aryl(C₀-C₄ alkyl)-, and
 20 monocyclic or bicyclic 5-10 membered heterocyclic(C₀-C₄ alkyl)-, and -CZ¹Z²Z³,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴;

Z¹ is selected from the group consisting of C₁-C₈ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₆ hydroxyalkyl, C₁-C₄ alkoxy C₁-C₄ alkyl, aryl(C₀-C₄ alkyl)-, and 4-10
 25 membered heterocyclic (C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴;

30 Z² is selected from the group consisting of C₁-C₈ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₆ hydroxyalkyl, C₁-C₄ alkoxy C₁-C₄ alkyl, C₁-C₆ NR¹⁷R¹⁸, aryl(C₀-C₄ alkyl)-, and 4-10 membered heterocyclic (C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R^{14} ;

Z^3 is selected from the group consisting of C_1 - C_8 alkyl, $R^{14}(C_2$ - C_4 alkyl)-, C_2 -
 5 C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_6 hydroxyalkyl, C_1 - C_4 alkoxy C_1 - C_4 alkyl, aryl(C_0 - C_4
 alkyl)-, 4-10 membered heterocyclic (C_0 - C_4 alkyl)-, $R^{17}O=C(C_0$ - C_4 alkyl)-,
 $R^{17}OO=C(C_0$ - C_4 alkyl)-, and $R^{17}R^{18}NO=C(C_0$ - C_4 alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R^{14} ;

10

alternatively, Z^1 and Z^2 , when on the same carbon atom, can be taken together with the carbon atoms to which they are attached to form a 3-7 membered carbocyclic or 3-7 membered heterocyclic non-aromatic ring system, said carbocyclic or heterocyclic ring being optionally substituted with 0-2 substituents independently
 15 selected from R^{14} .

R^{13} is selected from the group consisting of H, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, C_3 - C_{10} cycloalkyl(C_0 - C_4 alkyl)-, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylsulfonyl, C_3 - C_7 cycloalkyl(C_0 - C_5 alkyl)carbonyl, C_1 - C_6 alkoxy carbonyl, C_3 - C_7 cycloalkyl(C_0 - C_5
 20 alkoxy)carbonyl, aryl(C_0 - C_4 alkyl)-, aryl(C_1 - C_5 alkoxy)carbonyl, arylsulfonyl, heterocyclic(C_0 - C_4 alkyl), heterocyclic(C_1 - C_5 alkoxy)carbonyl, and heterocyclicsulfonyl,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C_1 - C_4 alkyl, C_1 - C_4 alkoxy, F, Cl, Br, CF_3 , CN, and NO_2 ;
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alternatively, R^{12} and R^{13} , when both are on the same nitrogen atom, can be taken together with the nitrogen atom to which they are attached to form a heterocycle selected from 1-aziridinyl, 1-azetidyl, 1-piperidinyl, 1-morpholinyl, 1-pyrrolidinyl, thiamorpholinyl, thiazolidinyl, and 1-piperazinyl,
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said heterocycle being optionally substituted with 0-3 groups independently selected from oxo, C_1 - C_6 alkyl, C_3 - C_7 cycloalkyl(C_0 - C_4 alkyl)-, C_1 - C_6 alkylcarbonyl,

C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxy carbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₅ alkyl), heterocyclic(C₀-C₅ alkyl), aryl(C₁-C₅ alkoxy)carbonyl, heterocyclic(C₁-C₅ alkoxy)carbonyl, C₁-C₆ alkylsulfonyl arylsulfonyl and heterocyclicsulfonyl,

- 5 wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of CH₃-, alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

- 10 R¹⁴ is selected from the group consisting of H, C₁-C₁₀ alkyl, NO₂, CF₃, CN, F, Cl, Br, C₁-C₁₀ alkylcarbonyl, haloalkyl, haloalkoxy, OH, NR⁶R⁷(C₀-C₄ alkyl)-, R⁶C(=O)O(C₀-C₄ alkyl)-, R⁶OC(=O)O(C₀-C₄ alkyl)-, R⁶O(C₀-C₄ alkyl)-, R⁶R⁷NC(=O)O(C₀-C₄ alkyl)-, R⁶R⁷NC(=O)(C₀-C₄ alkyl)-, R⁶O(CR¹⁰R¹¹)₂₋₆R⁶NC(=O)(C₀-C₄ alkyl)-, R⁶R⁷N(CR¹⁰R¹¹)₂₋₆R⁶NC(=O)(C₀-C₄ alkyl)-, R⁶O₂C(CH₂)₁₋₄O(C₀-C₄ alkyl)-, R⁶OOC(C₁-C₄ alkoxy)-, R⁶OOC(C₀-C₄ alkyl)-, R⁶C(=O)(C₀-C₄ alkyl)-, R⁶C(=O)NR⁷(C₀-C₄ alkyl)-, R⁶OC(=O)NR⁷(C₀-C₄ alkyl)-, R⁶OC(=NCN)NR⁷(C₀-C₄ alkyl)-, R⁶R⁷NC(=O)NR⁸(C₀-C₄ alkyl)-, R⁶OC(=NC)NR⁷(C₀-C₄ alkyl)-, R⁶(CR¹⁰R¹¹)₁₋₄NR⁷C=O-, R⁶O(CR¹⁰R¹¹)₁₋₄O=CR⁷N-, NR⁶R⁷(CR¹⁰R¹¹)₁₋₄C=O R⁷N-, R⁶O(CR¹⁰R¹¹)₂₋₄R⁷N-, R⁶O₂C(CR¹⁰R¹¹)₁₋₄R⁷N-, R⁶R⁷N(CR¹⁰R¹¹)₂₋₄R⁷N-, R⁶R⁷NC(=NCN)NR⁷(C₀-C₄ alkyl)-, R⁶R⁷NC(=C(H)(NO₂))NR⁷(C₀-C₄ alkyl)-, R⁷R⁸N C(=NR⁷)NR⁷(C₀-C₄ alkyl)-, R⁶R⁷N SO₂NR⁸(C₀-C₄ alkyl)-, R⁶SO₂NR⁷(C₀-C₄ alkyl)-, R⁶R⁷N(C₁-C₄)CO-, R⁶R⁷N(C₂-C₆ alkyl)O-, R⁶CO(CR¹⁰R¹¹)₀₋₂R⁷N(O₂)S(C₀-C₄ alkyl), R⁶(O₂)S R⁷NC(=O)(C₀-C₄ alkyl)-, R⁶S(C₀-C₄ alkyl)-, R⁶S(=O)(C₀-C₄ alkyl)-, R⁶SO₂(C₀-C₄ alkyl)-, SO₂NR⁶R⁷, SiMe₃, R⁶R⁷N(C₂-C₄ alkyl)-, R⁶R⁷N(C₂-C₄ alkoxy)-, HSO₃, HONH-, R⁶ONH-, R⁸R⁷NNR⁶-, HO(COR⁶)N-, HO(R⁶O₂C)N-, C₂-C₆ alkenyl,
- 20 C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkylmethyl, aryl(C₀-C₄alkyl)-, heteroaryl(C₀-C₄alkyl)-, aryl(C₀-C₄alkyl)O-, and heteroaryl(C₀-C₄alkyl)O-,

 wherein said aryl groups are substituted with 0-2 substituents independently selected from a group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, and NO₂;

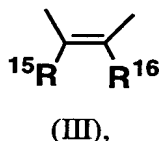
R^{15} is selected from the group consisting of H, halo, cyano, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, and C_3 - C_{10} cycloalkyl(C_0 - C_4 alkyl)-, aryl(C_0 - C_4 alkyl)-, and heterocyclic(C_0 - C_4 alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents
5 independently selected from R^{14} ; and

R^{16} is selected from the group consisting of H, halo, cyano, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, C_3 - C_{10} cycloalkyl(C_0 - C_4 alkyl)-, aryl(C_0 - C_4 alkyl)-, and heterocyclic(C_0 - C_4 alkyl)-,

10 wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from R^{14} ;

alternatively, when R^{15} and R^{16} are on adjacent carbon atoms, or when R^{15} and R^{16} are oriented on the same side of the double bond, as depicted in the following
15 structure (III)



R^{15} and R^{16} can be taken together with the carbon atoms to which they are attached to form a 3-7 membered carbocyclic aromatic or nonaromatic ring system, or a 3-7
20 membered heterocyclic aromatic or nonaromatic ring system, said carbocyclic or heterocyclic ring being optionally substituted with 0-2 substituents independently selected from the group consisting of C_1 - C_4 alkyl, C_1 - C_4 alkoxy, F, Cl, Br, CF_3 , NO_2 ;

R^{17} is selected from the group consisting of H, C_1 - C_8 alkyl, C_3 - C_6 alkenyl,
25 C_3 - C_{10} cycloalkyl(C_0 - C_4 alkyl)-, C_1 - C_6 alkylcarbonyl, C_1 - C_6 alkylsulfonyl, C_3 - C_7 cycloalkyl(C_0 - C_5 alkyl)carbonyl, C_1 - C_6 alkoxy carbonyl, C_3 - C_7 cycloalkyl(C_0 - C_5 alkoxy)carbonyl, hydroxy(C_2 - C_4)alkyl-, C_1 - C_3 alkoxy(C_2 - C_4)alkyl-, (C_0 - C_4 alkyl) (C_0 - C_4 alkyl) amino(C_2 - C_4)alkyl-, aryl(C_0 - C_4 alkyl)-, aryl(C_1 - C_5 alkoxy)carbonyl ,
30 arylsulfonyl, heterocyclic(C_0 - C_4 alkyl), heterocyclic(C_1 - C_5 alkoxy)carbonyl, and heterocyclicsulfonyl,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, C₁-C₄ alkoxy C₁-C₄ alkyl, oxo, F, Cl, Br, CF₃, CN, and NO₂;

- 5 R¹⁸ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl), wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂; and

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alternatively, R¹⁷ and R¹⁸, when both are on the same nitrogen atom, can be taken together with the nitrogen atom to which they are attached to form a heterocycle selected from 1-aziridinyl, 1-azetidiny, 1-piperidinyl, 1-morpholinyl, 1-pyrrolidinyl, thiamorpholinyl, thiazolidinyl, and 1-piperazinyl,

- 15 said heterocycle being optionally substituted with 0-3 groups selected from oxo, C₁-C₆ alkyl, C₃-C₇ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, (C₁-C₆ alkylcarbonyl)(C₀-C₄alkyl)amino-, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxycarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₅ alkyl), heterocyclic(C₀-C₅ alkyl), aryl(C₁-C₅ alkoxy)carbonyl, heterocyclic(C₁-C₅ alkoxy)carbonyl, C₁-C₆ alkylsulfonyl arylsulfonyl and heterocyclicsulfonyl,

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wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of CH₃-, alkoxy, F, Cl, Br, CF₃, CN, and NO₂.

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2. A compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein:

- 30 Z is either a 5, 6 or 7 membered monocyclic ring system substituted with R³ or R⁴ and optionally substituted with 0-4 substituents chosen from R¹ or R², or a 9 or 10 membered bicyclic ring system optionally substituted with 0-5 substituents chosen from R¹, R², R³ or R⁴, said ring systems optionally contain up to 4 heteroatoms

selected from N, O, and S, and wherein a CH₂ adjacent to any of the said N, O or S heteroatoms is optionally substituted with oxo (=O);

R³ is a 5- or 6-membered heterocyclic ring system containing up to 4
 5 heteroatoms selected from N, O, and S, said heterocyclic ring system being optionally substituted with 0-1 R⁵, wherein when R⁵ is hydroxy the heterocycle may undergo tautomerization to an oxo species or may exist as an equilibrium mixture of both tautomers;

10 J and K are taken together to be selected from: -NHC(=O)-, -NHCHR⁹-, and -C(=O)NH-;

X is selected from the group consisting of OR¹², NR¹²R¹³, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, C₆-C₁₀ aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,
 15 wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴, with the proviso that when L is a single bond, X cannot be NR¹²R¹³; and

R¹² is selected from the group consisting of ethyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, monocyclic or bicyclic aryl(C₀-C₄ alkyl)-, and monocyclic or bicyclic 5-10
 20 membered heterocyclic(C₀-C₄ alkyl)-, and -CZ¹Z²Z³,

wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴.

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3. A compound of claim 1, or a pharmaceutically acceptable salt thereof, said compound selected from the group consisting of:

N-(4-Fluorophenyl)-N2-[3-methoxy-4-(5-oxazolyl)phenyl]glycinamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N2-phenylglycinamide;
 30 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N2-(3-methylphenyl)glycinamide;
 [[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetic acid ethyl ester;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-phenylethanediamide;

- N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(2-methylphenyl)ethanediamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(3-methylphenyl)ethanediamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(4-methylphenyl)ethanediamide;
 (S)-[[[3-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]amino]phenyl]
 5 methyl]carbamic acid tetrahydro-3-furanyl ester;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(3-methoxyphenyl)ethanediamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(phenylmethyl)ethanediamide;
 N-(4-Cyanophenyl)-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
 3-[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]-3-oxopropanoic acid ethyl ester;
 10 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(3-methylphenyl)propanediamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(phenyl)propanediamide;
 (S)-[[[3-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]-1,3-
 dioxopropyl]amino]phenyl] methyl]carbamic acid tetrahydro-3-furanyl ester;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]benzeneacetamide;
 15 N-[3-Methoxy-4-(5-oxazolyl)phenyl]- α -oxobenzeneacetamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-1H-indole-2-carboxamide;
 N-(1,1-Dimethylethyl)-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
 N-[1,1-Bis(hydroxymethyl)propyl]-N'-[3-methoxy-4-(5-
 oxazolyl)phenyl]ethanediamide;
 20 N-(2-Hydroxy-1,1-dimethylethyl)-N'-[3-methoxy-4-(5-
 oxazolyl)phenyl]ethanediamide;
 N-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]-2-methylalanine 1,1-
 dimethylethyl ester;
 N-(2-Hydroxy-1,1-dimethylpentyl)-N'-[3-methoxy-4-(5-
 25 oxazolyl)phenyl]ethanediamide;
 N-[2-[(2-Hydroxy-1,1-dimethylethyl)amino]-1,1-dimethylethyl]-N'-[3-
 methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
 N-[2-(Dimethylamino)-1,1-dimethylethyl]-N'-[3-methoxy-4-(5-
 oxazolyl)phenyl]ethanediamide;
 30 N-(1,1-Diethyl-2-propynyl)-N'-[3-methoxy-4-(5-
 oxazolyl)phenyl]ethanediamide;

- N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(1,1,3,3-tetramethylbutyl)ethanediamide;
- N-(1,1-Dimethylpropyl)-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
- 5 N-[1-(Hydroxymethyl)cyclopentyl]-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
- N-[2-(4-Fluorophenyl)-1,1-dimethylethyl]-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
- N-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]- α -methyltyrosine methyl ester;
- 10 N-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]- α -methyltryptophan methyl ester;
- N-[1,1-Bis(hydroxymethyl)ethyl]-N'-[3-methoxy-4-(5-oxazolyl)phenyl]-N-methylethanediamide;
- N-(1,1-Dimethyl-3-oxobutyl)-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
- 15 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-N'-(1-methyl-1-phenylethyl)ethanediamide;
- N-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]-2-methylalanine methyl ester;
- 20 1-[[[3-Methoxy-4-(5-oxazolyl)phenyl]amino]oxoacetyl]amino]cyclopropanecarboxylic acid methyl ester;
- N-(1-Ethynylcyclohexyl)-N'-[3-methoxy-4-(5-oxazolyl)phenyl]ethanediamide;
- and (R)-N-[1-(Hydroxymethyl)-1-methylpropyl]-N'-[3-methoxy-4-(5-oxazolyl)phenyl]-N-methylethanediamide;
- 25 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-phenyl-2-propenamide;
- N-[3-Methoxy-4-(5-oxazolyl)phenyl]benzamide;
- N-[3-Methoxy-4-(5-oxazolyl)phenyl]-1-methyl-1H-indole-2-carboxamide;
- N-[3-Methoxy-4-(5-oxazolyl)phenyl]-2-benzofurancarboxamide;
- N-[3-Methoxy-4-(5-oxazolyl)phenyl]benzo[b]thiophene-2-carboxamide;
- 30 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-1,3-benzodioxole-5-carboxamide;
- 7-Methoxy-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-benzofurancarboxamide;
- 5-Hydroxy-N-[3-methoxy-4-(5-oxazolyl)phenyl]-1H-indole-2-carboxamide;

N-[3-Methoxy-4-(5-oxazolyl)phenyl]-5-(2-pyridinyl)-2-thiophenecarboxamide;

5-(1,1-Dimethylethyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-furancarboxamide;

- 5 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-5-methyl-2-thiophenecarboxamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-1-methyl-1H-pyrrole-2-carboxamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-4,5-dimethyl-2-furancarboxamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(4-methylphenyl)-2-propenamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(4-methylphenyl)-2-propenamide;
 10 (E)-3-(2-Fluorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-(3-Fluorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-(4-Fluorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-(2-Chlorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-(3-Chlorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 15 (E)-3-(3-Chlorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-[2-(trifluoromethyl)phenyl]-2-propenamide;
 (E)-3-(3-Cyanophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-[4-(Acetylamino)phenyl]-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 20 (E)-3-(2,3-Dimethoxyphenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-3-(2,6-Difluorophenyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 25 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(2,3,4-trimethoxyphenyl)-2-propenamide;
 (E)-2-Fluoro-N-[3-methoxy-4-(5-oxazolyl)phenyl]-3-phenyl-2-propenamide;
 (E)-3-(2-Furanyl)-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-propenamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(2-thienyl)-2-propenamide;
 30 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(3-pyridinyl)-2-propenamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(4-pyridinyl)-2-propenamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-(1-naphthalenyl)-2-propenamide;

N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3,4-dimethylbenzamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-2-indolizinecarboxamide;
 (E)-N-[3-Methoxy-4-(5-oxazolyl)phenyl]-3-[3-methoxy-4-(phenylmethoxy)phenyl]-2-propenamide;
 5 5-Hydroxy-N-[3-methoxy-4-(5-oxazolyl)phenyl]-1H-indole-2-carboxamide;
 N-[3-Methoxy-4-(5-oxazolyl)phenyl]-2,4-dimethyl-5-thiazolecarboxamide;
 and
 8-Hydroxy-N-[3-methoxy-4-(5-oxazolyl)phenyl]-2-quinolinecarboxamide

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4. A pharmaceutical composition for the treatment of an IMPDH-associated disorder, comprising a pharmaceutically acceptable carrier, adjuvant or vehicle and at least one compound of claim 1, or a pharmaceutically acceptable salt thereof, in an amount effective therefor.

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5. A pharmaceutical composition for the treatment of an IMPDH-associated disorder, comprising a pharmaceutically acceptable carrier, adjuvant or vehicle and at least one compound of claim 2, or a pharmaceutically acceptable salt thereof, in an amount effective therefor.

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6. A pharmaceutical composition for the treatment of an IMPDH-associated disorder, comprising a pharmaceutically acceptable carrier, adjuvant or vehicle and at least one compound of claim 3, or a pharmaceutically acceptable salt thereof, in an amount effective therefor.

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7. A method for the treatment of an IMPDH-associated disorder, comprising the step of administering to a subject in need thereof an amount effective therefor of at least one compound of claim 1 or a pharmaceutically acceptable salt thereof.

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8. A method for the treatment of an IMPDH-associated disorder, comprising the step of administering to a subject in need thereof an amount effective therefor of at least one compound of claim 2 or a pharmaceutically acceptable salt thereof.

9. A method for the treatment of an IMPDH-associated disorder, comprising the step of administering to a subject in need thereof an amount effective therefor of at least one compound of claim 3 or a pharmaceutically acceptable salt thereof.

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10. The method of claim 7, wherein said IMPDH-associated disorder is selected from the group consisting of an autoimmune disorder, an inflammatory disorder, a cancer or tumor disorder, a DNA or RNA viral replication disease, and allograft rejection.

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11. The method of claim 8, wherein said IMPDH-associated disorder is selected from the group consisting of an autoimmune disorder, an inflammatory disorder, a cancer or tumor disorder, a DNA or RNA viral replication disease, and allograft rejection.

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12. The method of claim 9, wherein said IMPDH-associated disorder is selected from the group consisting of an autoimmune disorder, an inflammatory disorder, a cancer or tumor disorder, a DNA or RNA viral replication disease, and allograft rejection.

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13. The method of claim 10, wherein said IMPDH-associated disorder is selected from transplant rejection, rheumatoid arthritis, inflammatory bowel disease, hepatitis B, hepatitis C, herpes simplex type I, and herpes simplex type II.

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14. The method of claim 11, wherein said IMPDH-associated disorder is selected from transplant rejection, rheumatoid arthritis, inflammatory bowel disease, hepatitis B, hepatitis C, herpes simplex type I, and herpes simplex type II.

15. The method of claim 12, wherein said IMPDH-associated disorder is selected from transplant rejection, rheumatoid arthritis, inflammatory bowel disease, hepatitis B, hepatitis C, herpes simplex type I, and herpes simplex type II.

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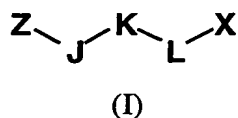
16. The method of claim 7, wherein said compound of claim 1, or a pharmaceutically acceptable salt thereof, is administered with one or more of: an immunosuppressant, an anti-cancer agent, an anti-viral agent, an anti-inflammatory agent, an anti-fungal agent, an antibiotic, an anti-vascular hyperproliferation
5 compound, or an IMPDH inhibitor other than a compound of claim 1 or a pharmaceutically acceptable salt thereof.

17. The method of claim 8, wherein said compound of claim 2, or a pharmaceutically acceptable salt thereof, is administered with one or more of: an
10 immunosuppressant, an anti-cancer agent, an anti-viral agent, an anti-inflammatory agent, an anti-fungal agent, an antibiotic, an anti-vascular hyperproliferation compound, or an IMPDH inhibitor other than a compound of claim 2 or a pharmaceutically acceptable salt thereof.

18. The method of claim 9, wherein said compound of claim 3, or a pharmaceutically acceptable salt thereof, is administered with one or more of: an immunosuppressant, an anti-cancer agent, an anti-viral agent, an anti-inflammatory agent, an anti-fungal agent, an antibiotic, an anti-vascular hyperproliferation
15 compound, or an IMPDH inhibitor other than a compound of claim 3 or a pharmaceutically acceptable salt thereof.
20

19. The method of claim 17, wherein said compound of claim 2, or a pharmaceutically acceptable salt thereof, is administered with one or more of: another IMPDH inhibitor; a cyclosporin; CTLA4-Ig; an antibody selected from anti-ICAM-3,
25 anti-IL-2 receptor (Anti-Tac), anti-CD45RB, anti-CD2, anti-CD3 (OKT-3), anti-CD4, anti-CD80, anti-CD86, and monoclonal antibody OKT3; an agent blocking the interaction between CD40 and CD154; a fusion protein constructed from CD40 and/or CD154/gp39; an inhibitor of NF-kappa B function; a non-steroidal antiinflammatory drug (NSAID); a gold compound; an antiviral agent; an antiproliferative ; a cytotoxic
30 drug; an TNF- α inhibitor; an anti-TNF antibody; a soluble TNF receptor; and rapamycin (sirolimus or Rapamune); or derivatives thereof.

20. A compound of the following Formula I, or a pharmaceutically acceptable salt thereof:



5 wherein:

- (1) Z is a saturated, partially saturated or unsaturated monocyclic or bicyclic ring system optionally containing up to 4 heteroatoms selected from N, O, and S, and wherein a CH₂ adjacent to any of the said N, O or S heteroatoms is optionally substituted with oxo (=O), and wherein Z is optionally substituted with 0-3 substituents chosen from R¹, R², R³ or R⁴;
- (2) R¹ and R² are independently selected from the group consisting of H, F, Cl, Br, I, NO₂, CF₃, CN, OCF₃, OH, C₁-C₄alkoxy-, C₁-C₄alkylcarbonyl-, C₁-C₆ alkyl, hydroxy C₁-C₄ alkyl-, C₃-C₆ alkenyl, C₃-C₆ alkynyl, C₃-C₁₀ cycloalkyl(C₀-C₄alkyl)-, H₂N(C₀-C₄)alkyl-, R⁶HN(C₀-C₄)alkyl-, R⁶R⁷N(C₀-C₄)alkyl-, R⁷S(C₀-C₄)alkyl-, R⁷S(O)(C₀-C₄)alkyl-, R⁷SO₂(C₀-C₄)alkyl-, R⁶NSO₂(C₀-C₄)alkyl-, HSO₃, HO₂C(C₀-C₄)alkyl-, R⁶O₂C(C₀-C₄)alkyl-, and R⁶R⁷NCO(C₀-C₄)alkyl-;
- alternatively, R¹ and R², when on adjacent carbon atoms, may be taken together to be methylenedioxy or ethylenedioxy;
- (3) R³ is a 5- or 6-membered heterocyclic ring system containing up to 4 heteroatoms selected from N, O, and S, said heterocyclic ring system being optionally substituted with 0-3 R⁵, when R⁵ is hydroxy the heterocycle may undergo tautomerization to an oxo species, or exist as an equilibrium mixture of both tautomers;
- (4) R⁴ is selected from the group consisting of H, F, Cl, Br, I, NO₂, CF₃, CN, OCF₃, OH, C₁-C₄alkoxy-, hydroxyC₁-C₄ alkyl-, C₁-C₄ alkylcarbonyl-, NH₂,

NHR^6 , NR^6R^7 , SR^6 , S(O)R^6 , SO_2R^6 , $\text{SO}_2\text{NR}^6\text{R}^7$, CO_2H , CO_2R^6 , and CONR^6R^7 ;

- (5) R^5 is selected from the group consisting of H, F, Cl, Br, I, NO_2 , CN, CF_3 , OCF_3 , OH, oxo, $\text{C}_1\text{-C}_4$ alkoxy-, hydroxy $\text{C}_1\text{-C}_4$ alkyl-, $\text{C}_1\text{-C}_4$ alkylcarbonyl-, CO_2H , CO_2R^6 , CONR^6R^7 , NHR^6 , and NR^6R^7 ;
- (6) R^6 is selected from the group consisting of H, $\text{C}_1\text{-C}_8$ alkyl, $\text{C}_3\text{-C}_6$ alkenyl, $\text{C}_3\text{-C}_6$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl($\text{C}_0\text{-C}_4$ alkyl)-, aryl($\text{C}_0\text{-C}_4$ alkyl)-, and heterocyclic ($\text{C}_0\text{-C}_4$ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of $\text{C}_1\text{-C}_4$ alkyl, $\text{C}_1\text{-C}_4$ alkoxy, hydroxy $\text{C}_0\text{-C}_4$ alkyl, oxo, F, Cl, Br, CF_3 , NO_2 , CN, OCF_3 , NH_2 , NHR^7 , NR^7R^8 , SR^7 , S(O)R^7 , SO_2R^7 , $\text{SO}_2\text{NR}^7\text{R}^8$, CO_2H , CO_2R^7 , and CONR^7R^8 ;
- (7) R^7 and R^8 are independently selected from the group consisting of H, $\text{C}_1\text{-C}_8$ alkyl, $\text{C}_3\text{-C}_6$ alkenyl, $\text{C}_3\text{-C}_6$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl($\text{C}_0\text{-C}_4$ alkyl)-, $\text{C}_1\text{-C}_6$ alkylcarbonyl, $\text{C}_3\text{-C}_7$ cycloalkyl($\text{C}_0\text{-C}_5$ alkyl)carbonyl, $\text{C}_1\text{-C}_6$ alkoxycarbonyl, $\text{C}_3\text{-C}_7$ cycloalkyl($\text{C}_0\text{-C}_5$ alkoxy)carbonyl, aryl($\text{C}_1\text{-C}_5$ alkoxy)carbonyl, arylsulfonyl, aryl($\text{C}_0\text{-C}_4$ alkyl)-, heterocyclic($\text{C}_1\text{-C}_5$ alkoxy)carbonyl, heterocyclic sulfonyl and heterocyclic ($\text{C}_0\text{-C}_4$ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of $\text{C}_1\text{-C}_4$ alkyl, $\text{C}_1\text{-C}_4$ alkoxy, F, Cl, Br, CF_3 , CN, and NO_2 ;
- (8) alternatively, R^6 and R^7 , or R^6 and R^8 , or R^7 and R^8 , when both substituents are on the same nitrogen atom [as in ($-\text{NR}^6\text{R}^7$) or ($-\text{NR}^7\text{R}^8$)], can be taken together with the nitrogen atom to which they are attached to form a heterocycle selected from the group consisting of 1-aziridinyl, 1-azetidiny, 1-piperidinyl, 1-morpholinyl, 1-pyrrolidinyl, thiamorpholinyl, thiazolidinyl, and 1-piperazinyl, said heterocycle being optionally substituted with 0-3 groups

selected from the group consisting of oxo, C₁-C₆ alkyl, C₃-C₇ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxy carbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₅ alkyl), heterocyclic(C₀-C₅ alkyl), aryl(C₁-C₅ alkoxy)carbonyl, heterocyclic(C₁-C₅ alkoxy)carbonyl, C₁-C₆ alkylsulfonyl, arylsulfonyl, and heterocyclicsulfonyl,
 5 wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

10 (9) J is selected from the group consisting of -NR⁷-, and -C(=O)-;

(10) K is selected from the group consisting of -NR⁷-, -C(=O)-, and -CHR⁹-;

(11) L is selected from the group consisting of a single bond (i.e., L is absent), -
 15 C(=O), -CHR⁹-, -C(=O)CHR¹⁰-, -CHR¹⁰C(=O)-, -CR¹⁰R¹¹C(=O)-, -HR¹⁵C-CHR¹⁶-, and -R¹⁵C=CR¹⁶-;

(12) R⁹ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,
 20

 wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, and NO₂;

25 (13) R¹⁰ is selected from the group consisting of H, F, Cl, Br, C₁-C₆ alkoxy, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

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(14) R¹¹ is selected from the group consisting of H, F, Cl, Br, OMe, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and

heterocyclic(C₀-C₄ alkyl)-, wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

- 5 (15) alternatively, R¹⁰ and R¹¹, when on the same carbon atom [as in (-CR¹⁰R¹¹-)], can be taken together with the carbon atoms to which they are attached to form a 3-7 membered carbocyclic or 3-7 membered heterocyclic non-aromatic ring system, said carbocyclic or heterocyclic ring being optionally substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄
10 alkyl, C₁-C₄ alkoxy, hydroxy C₀-C₄ alkyl, oxo, F, Cl, Br, CF₃, NO₂;
- (16) X is selected from the group consisting of OR¹², NR¹²R¹³, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, C₆-C₁₀ aryl(C₀-C₄ alkyl)-, -CR⁴=CR⁵(heteroaryl), -CR⁴=CR⁵(aryl), and heterocyclic(C₀-C₄ alkyl)-,
15 wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴, with the proviso that when L is a single bond (i.e., L is absent), X cannot be NR¹²R¹³;
- (17) R¹² is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and 4-10 membered heterocyclic(C₀-C₄ alkyl)-,
20 wherein said aryl or heterocyclic groups are substituted with 0-3 substituents independently selected from R¹⁴;
- (18) R¹³ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, C₁-C₆ alkylsulfonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxycarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₄ alkyl)-, aryl(C₁-C₅ alkoxy)carbonyl, arylsulfonyl, heterocyclic(C₀-C₄ alkyl), heterocyclic(C₁-C₅ alkoxy)carbonyl, and heterocyclicsulfonyl,
25
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wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, CN, and NO₂;

- 5 (19) alternatively, R¹² and R¹³, when both are on the same nitrogen atom [as in (-NR¹²R¹³)] can be taken together with the nitrogen atom to which they are attached to form a heterocycle selected from 1-aziridinyl, 1-azetidiny, 1-piperidinyl, 1-morpholinyl, 1-pyrrolidinyl, thiamorpholinyl, thiazolidinyl, and 1-piperazinyl,
- 10 said heterocycle being optionally substituted with 0-3 groups selected from oxo, C₁-C₆ alkyl, C₃-C₇ cycloalkyl(C₀-C₄ alkyl)-, C₁-C₆ alkylcarbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkyl)carbonyl, C₁-C₆ alkoxy carbonyl, C₃-C₇ cycloalkyl(C₀-C₅ alkoxy)carbonyl, aryl(C₀-C₅ alkyl), heterocyclic(C₀-C₅ alkyl), aryl(C₁-C₅ alkoxy)carbonyl, heterocyclic(C₁-C₅ alkoxy)carbonyl, C₁-C₆
- 15 alkylsulfonyl arylsulfonyl and heterocyclicsulfonyl,
- wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from the group consisting of CH₃-, alkoxy, F, Cl, Br, CF₃, CN, and NO₂;
- 20 (20) R¹⁴ is selected from the group consisting of H, C₁-C₁₀ alkyl, NO₂, CF₃, CN, F, Cl, Br, C₁-C₁₀ alkylcarbonyl, NR⁶R⁷(C₀-C₄ alkyl)-, R⁶C(=O)O(C₀-C₄ alkyl)-, R⁶OC(=O)O(C₀-C₄ alkyl)-, R⁶O(C₀-C₄ alkyl), R⁶R⁷NC(=O)O(C₀-C₄ alkyl)-, R⁶O₂CCH₂O(C₀-C₄ alkyl)-, R⁶OOC(C₁-C₄ alkoxy)-, R⁶OOC(C₀-C₄ alkyl)-, R⁶C(=O)(C₀-C₄ alkyl)-, R⁶C(=O)NR⁷(C₀-C₄ alkyl)-, R⁶OC(=O)NR⁷(C₀-C₄
- 25 alkyl)-, R⁶OC(=NCN)NR⁷(C₀-C₄ alkyl)-, R⁶R⁷NC(=O)NR⁸(C₀-C₄ alkyl)-, R⁶R⁷NC(=NCN)NR⁷(C₀-C₄ alkyl)-, R⁶R⁷NC(=C(H)(NO₂))NR⁷(C₀-C₄ alkyl)-, R⁷R⁸N C(=NR⁷) NR⁷(C₀-C₄ alkyl)-, R⁶R⁷N SO₂NR⁸(C₀-C₄ alkyl)-, R⁶SO₂NR⁷(C₀-C₄ alkyl)-, R⁶S(C₀-C₄ alkyl)-, R⁶S(=O)(C₀-C₄ alkyl)-, R⁶SO₂(C₀-C₄ alkyl)-, SO₂NR⁶R⁷, SiMe₃, R⁶R⁷N(C₂-C₄ alkyl)-, R⁶R⁷N(C₂-C₄
- 30 alkoxy)-, HSO₃, HONH-, R⁶ONH-, R⁸R⁷NNR⁶-, HO(COR⁶)N-, HO(R⁶O₂C)N, C₂-C₆ alkenyl, C₃-C₁₀ cycloalkyl, C₃-C₁₀ cycloalkylmethyl, aryl, heteroaryl, arylO-, and aryl(C₁-C₅ alkyl)-,

wherein said aryl groups are substituted with 0-2 substituents independently selected from a group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, and NO₂;

- 5 (21) R¹⁵ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, and C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from R¹⁴; and

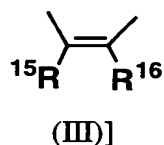
10

- (22) R¹⁶ is selected from the group consisting of H, C₁-C₈ alkyl, C₃-C₆ alkenyl, C₃-C₁₀ cycloalkyl(C₀-C₄ alkyl)-, aryl(C₀-C₄ alkyl)-, and heterocyclic(C₀-C₄ alkyl)-,

wherein said aryl or heterocyclic groups are substituted with 0-2 substituents independently selected from R¹⁴;

15

- (23) alternatively, when R¹⁵ and R¹⁶ are on adjacent carbon atoms [as in -HR¹⁵C-CHR¹⁶-], or when R¹⁵ and R¹⁶ are oriented on the same side of the double bond [as in structure (III)],



R¹⁵ and R¹⁶ can be taken together with the carbon atoms to which they are attached to form a 3-7 membered carbocyclic aromatic or nonaromatic ring system, or a 3-7 membered heterocyclic aromatic or nonaromatic ring system, said carbocyclic or heterocyclic ring being optionally substituted with 0-2 substituents independently selected from the group consisting of C₁-C₄ alkyl, C₁-C₄ alkoxy, F, Cl, Br, CF₃, NO₂.

21. A pharmaceutical composition for the treatment of an IMPDH-associated disorder, comprising a pharmaceutically acceptable carrier, adjuvant or vehicle and at least one compound of claim 20, or a pharmaceutically acceptable salt thereof, in an amount effective therefor.

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22. A method for the treatment of an IMPDH-associated disorder, comprising the step of administering to a subject in need thereof an amount effective therefor of at least one compound of claim 20 or a pharmaceutically acceptable salt thereof.

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